



Name: \_\_\_\_\_  
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 Geometry, Period \_\_\_\_\_  
 Due Date: Wed, 18 Feb 2015

HW102\_Tangent

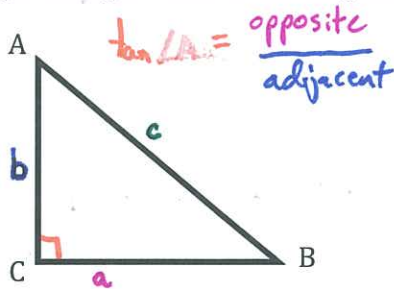
**Geometry  
Homework**

Form A

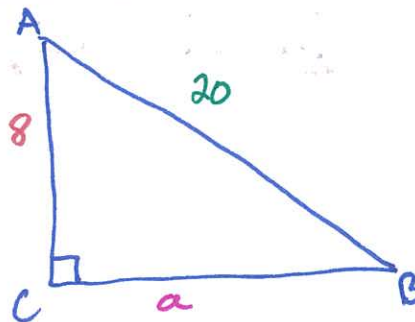
**Failure to show all work and write in complete sentences will result in LaSalle.**

- What does SOHCAHTOA stand for?
- Do trig ratios (sine, cosine, and tangent) apply to all triangles? Explain.

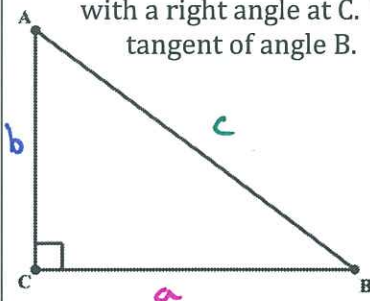
- 1) In the figure below,  $\angle C$  is a right angle and  $a$ ,  $b$ , and  $c$  represent the lengths of the sides of the right triangle. What is the tangent of  $\angle A$ ?



- 2) Using the same figure as #1, if  $c = 20$  and  $b = 8$ , first explain how you could find the measure of  $a$ , then calculate the measure of  $a$ .

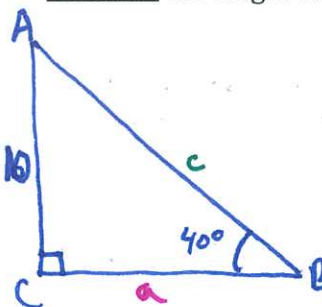


- 3) In the figure below,  $\triangle ABC$  is a right triangle with a right angle at  $C$ . Write a ratio for the tangent of angle  $B$ .

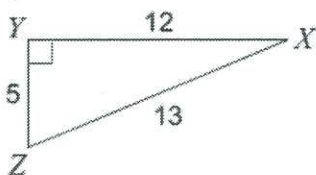


$\overline{AC} = b$      $\overline{CB} = a$      $\overline{AB} = c$

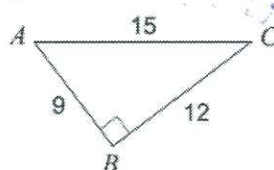
- 4) Using the same figure as #3, given  $m\angle B = 40^\circ$  and  $\overline{AC} = 10$ , first explain how you could find the length of  $\overline{CB}$ , then calculate the length of  $\overline{CB}$ ?



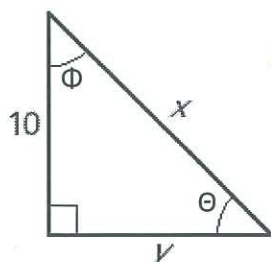
- 5) Find  $\tan X$ .



- 6) Find  $\tan A$



- 7) Write the proportions for the tangent of angles  $\Theta$  (pronounced *theta*) and  $\Phi$  (called *phi*).

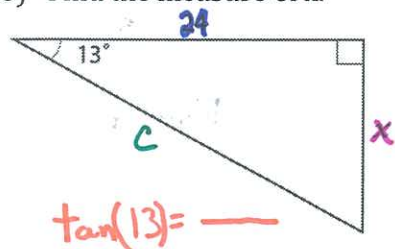


$\tan \Theta =$

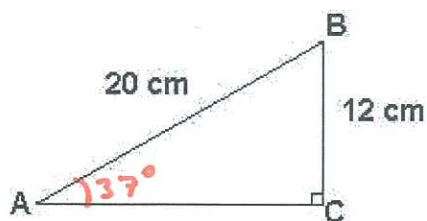
$\tan \Phi =$

**Define Your Pride.**

8) Find the measure of  $x$ .



9) If  $m\angle A = 37^\circ$ , find the length of side AC.



### Spiraled Review ~ show all work or explain your answer

1.

$x = \{-4, 2\}$  is the solution set for which of the following quadratic equations?

- A.  $x^2 - 8x - 2 = 0$
- B.  $x^2 - 8x + 2 = 0$
- C.  $x^2 - 2x + 8 = 0$
- D.  $x^2 + 2x - 8 = 0$
- E.  $x^2 - 4x + 2 = 0$

$x = \{-4, -2\}$   
 $(x + 4)(x + 2) = 0$

2.

What are the solutions of the equation  $x^2 + 5x = 24$ ?

- F. 4 and 6
- G. -3 and 8
- H. -6 and 4
- J. -8 and 3
- K. Cannot be determined by given information.

①  $x^2 + 5x - 24 = 0$   
 ② make your box

3.

What is the sum of the coordinates of the midpoint of a segment with endpoints A(3, 7) and B(-5, -6)?

- a. 0
- b.  $-\frac{1}{2}$
- c.  $\frac{1}{2}$
- d. 1
- e. -1

$\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} = x_m, y_m$

to find answer you need to add  $x_m$  and  $y_m$  together

4.

Same process as #3!

In the standard  $(x, y)$  coordinate plane, points P and Q have coordinates (2, 3) and (12, -15), respectively. What are the coordinates of the midpoint of  $\overline{PQ}$  and the sum of the coordinates??

- a. (6, -12); -6
- b. (6, -9); -3
- c. (6, -6); 0
- d. (7, -9); -2
- e. (7, -6); 1

5.

If  $-7 \leq x \leq -3$  and  $24 \leq y \leq 31$ , what is the largest possible value for  $x - y$ ?

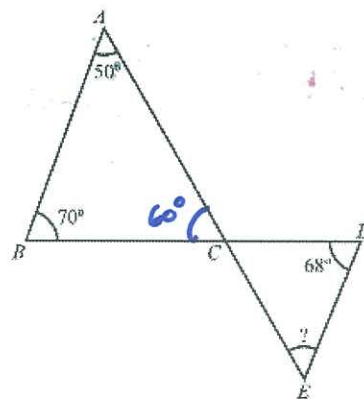
- A. -34
- B. -31
- C. -27
- D. 28
- E. 31

x	y	difference
-7	31	$-7 - 31 = -38$
-5	24	$-5 - 24 = -29$

pick more x and y values

6.

In the figure below, C lies on  $\overline{BD}$  and  $\overline{AE}$ . What is the measure of  $\angle E$ ?



- A.  $50^\circ$
- B.  $52^\circ$
- C.  $68^\circ$
- D.  $70^\circ$
- E.  $72^\circ$